

# Nutrition and Pregnancy

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## **INTRODUCTION**

Pregnancy, although it only occurs for only nine months at a time, accounts for the most intense growth period that humans will ever experience. (1) How well this period of life goes depends on many different factors, many of which can easily be controlled by how well the pregnant female takes care of herself during this time. There are obvious benefits to keeping an optimal health status while carrying a living being inside of you. There is really no more important time in your life to be receiving adequate nutrition. Despite how easy it can be to take precautions against many pregnancy complications, the United States had a higher infant mortality rate as of 2005 as compared to other developed countries. (2) This rate was 6.5 infant deaths per 1,000 live births. In order to avoid becoming part of this statistic, a pregnant female should be sure to gain the proper amount of weight, intake the proper amounts of nutrients, receive the proper amounts of exercise, as well as avoiding certain substances which can be harmful to the fetus.

## **REVIEW OF LITERATURE**

The first thing a pregnant female can do to ensure she stays healthy during her pregnancy is to gain a healthy amount of weight. The amount of weight she will need to gain depends on her Body Mass Index before she became pregnant. (3) If she was underweight, she should gain 28-40 pounds throughout her entire pregnancy. If she was a normal weight, she should gain 25-35 pounds throughout her entire pregnancy. If she was overweight prior to her pregnancy, she should gain 15-25 pounds. Finally, if she was obese before her pregnancy, she only needs to gain 11- 25 pounds during her pregnancy. These differences in weight gain requirements are due to the fact that women of different BMIs will have different amount of fat stores already in order to support their baby. (1) An underweight woman needs to gain more weight because she will end up retaining some of this weight for her own needs. An overweight or obese woman doesn't need to gain as much because she already has some energy stores in order to support the growth of the fetus. The weight should be gained gradually throughout the pregnancy. (3) Only about 2-4 pounds should be gained during the first trimester, followed by 3-4 pounds per month after that. This can be done simply by increasing calorie intake by about 300 calories per day above what her intake was prior to pregnancy. Gaining too much weight during pregnancy can result in both the mother and baby having an increased risk of being overweight in the future.

Perhaps one of the most important nutrients a pregnant woman should make sure she is getting an adequate intake of is folate. This vitamin is extremely important, especially in the beginning of pregnancy, because it helps in preventing neural tube defects. (4) Folate is also involved in the synthesis of DNA, gene expression, and gene regulation. Fortification of foods can help pregnant women to reach the recommended intake of folate. Pregnant women should be getting 600 micrograms of dietary folate, as well as 400 micrograms of folic acid from supplements or fortified foods daily throughout their entire pregnancy. (1) It is highly recommended that women who are planning on becoming pregnant regularly consume enough

folate, since it is so crucial during the beginning of pregnancy. (5) If a woman is not already consuming enough folate before she is aware of her pregnancy, it may be too late to prevent neural tube defects once she actually finds out that she is pregnant.

Another nutrient that is important to have enough of during pregnancy is calcium. Inadequate calcium during pregnancy can cause increased blood pressure for the mother and baby, as well as decreased bone remineralization. Also, lack of calcium has also been known to cause lead toxicity. (6) This occurs because, as bone demineralizes due to lack of calcium, lead is released into the bloodstream. This can seriously disrupt the development of the fetus. It has been proven that calcium supplementation during pregnancy reduces blood lead levels. It is recommended that adult pregnant women consume 1,000 milligrams of calcium per day. Younger pregnant females who are still growing themselves may need to consume up to 1,300mg per day in order to support their own growth as well as their baby's.

In addition to calcium, Vitamin D is also very important to the growth of the fetus during pregnancy. It helps with the addition of calcium to bone, and tooth and enamel formation. (1) Vitamin D can come from three main sources. These include UVB radiation from the sun, dietary Vitamin D in foods, as well as supplements. (7) The 2011 RDA for Vitamin D in pregnant women was set at 600 IU per day. Women with darker skin should pay special attention to their Vitamin D intake because it is more difficult for them to absorb it from the sun.

Adequate iron during pregnancy is necessary for the formation of red blood cells, which is important due to the increase in blood volume during pregnancy. (2) Iron deficiency anemia occurs when iron stores are depleted and can increase the risk for preterm delivery and low birth weight. It has also been related to slower development for the child later in life. It is important that iron status be assessed in the first prenatal visit to check the need for iron supplements. If supplementation is not needed, then iron supplements should be avoided. Excess iron intake can have harmful effects on the immune system of a pregnant woman and cause iron poisoning for the fetus. (5) The DRI for iron in pregnant women is 27 milligram per day.

Another nutrient requirement that increases in pregnancy due to the increase in blood volume is the need for fluids. (1) Staying hydrated during pregnancy can help in preventing dehydration, constipation, excessive swelling, and urinary and bladder infections. The Institute of Medicine Recommends pregnant women drink 10 cups of fluids per day. (3) The need for fluids may increase for those who exercise more or live in hot climates.

In addition to getting the right amount of nutrients during pregnancy, expecting mothers should also be getting exercise. Many women may be afraid to exercise during pregnancy for fear of injuring their baby or causing preterm delivery, however no study has found negative effects on moderate intensity exercise during this period. (8) Many women do not exercise during pregnancy because they report feeling tired or "unwell", however exercise can actually result in reduced stress, an enhanced sense of well being, as well as reduced labor time. It also helps to reduce the risk for gestational diabetes, low back pain, and excessive weight gain. (1) It should be recommended to pregnant women that they do low impact exercise such as jogging,

biking and swimming, 3 to 5 times a week for thirty minutes. They should make sure to stop if they get too overheated and to not exercise to the point of exhaustion.

In order to ensure their baby is born as healthy as possible, there are a number of things that women should avoid during their pregnancy. Because the unborn baby's immune system is not fully developed, it is important to stay away from foods that may cause foodborne illnesses. (9) These illnesses could possibly result in premature delivery or miscarriage. Potentially harmful foods may include unpasteurized milk and cheeses, raw eggs and meat, and processed meats not properly cooked. (1) Also, due to their mercury content, intake of fish should be limited to no more than 12 ounces per week.

Especially important to avoid at all costs during pregnancy is tobacco and drugs. (1) These substances can very easily be passed to the growing fetus who could potentially be born addicted to them. Other potential problems can be prematurity, low birth weight, asthma, or even SIDs. There has also been no safe amount of alcohol determined for pregnancy. (10) Despite this fact, 1 in 12 pregnant women in the United States abuse alcohol. Drinking alcohol during pregnancy may result in fetal alcohol spectrum disorders, which include a range of many different birth defects and disabilities.

Pregnant women may also be advised by their doctor to avoid certain medications during their pregnancy. (1) Even if these medications are something that was prescribed to them before they were pregnant, they could potentially be harmful to their baby and they may be advised to avoid them.

## **CONCLUSION**

Pregnancy can be a wonderful time in a woman's life. To ensure that this stage of life is as wonderful as possible, it is important that she take proper care of herself. By obtaining the proper nutrients, exercising, and avoiding substances that can be harmful to her or her baby, she can be sure to have as successful of a pregnancy as possible. By starting her baby's life off on the right track, it will make it that much easier for them to have a bright future.

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